reacting to a decrease in pressure from on one of the surfaces thereof. Thus, it respectfully submitted that it is incorrect to state (as is stated in the Office Action) that the "diaphragm of Schulte is used to create a vacuum to draw fluids from the body as Williams." Further, in this regard, the membrane or diaphragm is used for internal use (it drains only into the heart) as is evident from Figures 1 and 2 and column 1, lines 20-23. Still further, the diaphragm does not generate a pressure differential but instead reacts to a change in pressure on one side of the diaphragm or membrane. The change in pressure is caused by the "wearer" changing position and thus altering liquid pressure in the drain. Such changes are potentially very dangerous to the wearer if the downstream pressure drops too much and thus causes too much liquid to be drained from the brain. Limiting these changes, and hence ensuring that a safe level of fluid stays in the brain, is a fundamental technical problem that Schulte seeks to address. This problem is, of course, quite different from any problem associated with breast pumps.

It is also noted that while the volume change associated with the operation of the Schulte system is not mentioned, this change would be expected to be essentially negligible given that the volume resides in a narrow tube lodged inside the body. In any event, there certainly is no teaching that the diaphragm or membrane of Schulte can be adapted to produce a significant volume change such as is needed to provide a pressure decrease.

With this background, it is respectfully submitted that there is no reason to combine the teachings of the Schulte and Williams patents given the actual teachings of these references. There is no recognition in Schulte (or Williams) of the advantage provided by a non-stretch diaphragm in the environment claimed in the claims presented. In other words, there is nothing taught by either reference that would indicate or suggest to one of ordinary skill in the art that energy efficiency can be improved if a non-stretch diaphragm were to be used in the Williams pump. The Examiner quotes the statement from the Schulte patent that "[t]his illustrative diaphragm 135 has a fabric reinforcement 136 which will prevent stretching." However, this appears to be the only teaching with respect to stretching in the entire patent, and the

patent clearly does not discuss the potential problem solved by the present invention, i.e., improving energy efficiency.

Again, while neither Schulte nor Williams recognizes the problem of energy loss due to stretching of conventional diaphragms used in breast pumps, the present invention is based, at least in part, on the recognition of a technical problem not previously known or recognized in the prior art. Moreover, generally speaking, the technical considerations that apply to a diaphragm in one technical field (e.g., capacity, efficiency, suction) are irrelevant to the technical considerations in other technical fields and this is certainly the case here. Thus, it is respectfully submitted that the Examiner cannot properly apply the teachings of Schulte, which is concerned with the drainage of cranial fluids, (a completely different technical field from that of manual breast pumps), to the breast pump of Williams. It is also noted, that when non-stretch diaphragms are used in the prior art, the purpose is usually to extend the life of an elastic part, not to increase energy efficiency. This is another reason why one of ordinary skill in the art would not think to use a non-stretch diaphragm in a manual breast pump, because failure of diaphragm due to material fatigue is simply not a problem in such manual pumps.

To both support and supplement the arguments set forth above, a declaration by Arnold Rees, an expert in this art, is submitted herewith. As stated in the Rees declaration, at the time of the international filing date of this application (June 19, 2003), (i) all manual breast pumps used either a piston or a stretchable diaphragm to generate suction, and (ii) the provision of a manual breast pump having a non-stretch diaphragm (as set forth in the claims presented) solved a problem associated with conventional stretchable diaphragm breast pumps, viz., the wasting of energy caused by stretching of the diaphragm and the consequent reduction in the suction produced by the pump. As also set forth in the Rees declaration, the problem of energy loss due to the use of stretchable diaphragms was not known to the manual breast pump industry at the time of the filing of the international application.

As the Rees declaration also confirms, the manual breast pump produced and marketed by the assignee (Jackel), which is based on the present invention as claimed, and which is referred to in the declaration as the FREEDOM pump, has been much

more successful than the predecessor pump produced and marketed by the assignee. Importantly, the improved efficiency provided by the non-stretch diaphragm has been a key contributor to the commercial success of the new pump. In other words, the Rees declaration also establishes a nexus between the commercial success of the new pump and a key feature of the present invention which distinguishes the invention from the prior art. It will be understood that the improved efficiency of the new pump has meant that users of the pump find the process of producing milk has been made far less tiring.

In summary, because the Rees declaration makes it clear that the problem of energy wastage associated with conventional stretchable diaphragms was not known in the manual breast pump industry at the time of the effective filing date of this application, it follows that it would not have been obvious for one of ordinary skill in this industry to look for a solution to this problem at that time. Moreover, it is also respectfully urged that, as discussed above, one of ordinary skill in the art, looking to improve a manual breast pump, would simply have no reason whatsoever to look to the technical field of cranial fluid drainage (i.e., the field of the Schulte patent) in which the technical considerations are clearly very different from those in manual breast pumps. Again, it is respectfully submitted that there is simply no reason to combine the teachings of the Williams and Schulte patents given the actual teachings of these two patents, and that the proposed combination is necessarily a non-obvious one.

Turning to the dependent claims, these claims are patentable for at least the reasons set forth above in support of the patentability of claims 1-13 and 20-25. Moreover, it is respectfully submitted that at least claims 15-20 are separately patentable. These claims have been rejected under 35 U.S.C. 103(a) as being "unpatentable over" Williams and Schulte in view of Ytteborg. It is respectfully submitted that the breast horn disclosed in Ytteborg simply does not comprise flexible membranes that comprise the thickness of the horn such that the user can manipulate the breast through apertures in outer rigid portion. In this regard, Ytteborg discloses a two layer structure in which the outer layer is always a rigid material. There are no apertures in this outer rigid materials, and thus no aperatures comprising a flexible membrane. Accordingly, Ytteborg does not provide the advantage of the present invention as claimed in these claims whereby the user can manipulate the breast by

applying pressure directly to the flexible membranes, thereby allowing more control of the manipulation that is carried out. This feature leads to a more comfortable experience for the user of the breast pump. Again, it is respectfully submitted that this feature is simply not disclosed by Ytteborg, and thus claims 15-20 are separately patentable for this reason as well.

Allowance of the application in its present form is respectfully solicited.

Respectfully submitted,

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